

Region 6 - Enforcement & Compliance Assurance Division

INSPECTION REPORT

Inspection Date(s):	August 28, 2023	
Media Program:	Water	
Regulatory Program(s)	CWA	
Company Name:	City of Aztec	
Facility Name:	Aztec Wastewater Treatment plant	
Facility Physical Location:	900 South Oliver Street	
(city, state, zip code)	Aztec, New Mexico 87410	
Mailing address:	201 W. Chaco	
(city, state, zip code)	Aztec, New Mexico 87410	
County/Parish:	San Juan	
Facility Phone Number	505-334-7660	
Facility Contact:	Ruben Salcido	Public Works Director
	rsalcido@aztecnm.gov	
FRS Number:	110022724471	
Identification/Permit Number:	NM0020168	
Media Identifier Number:	N/A	
NAICS:	221320	
SIC:	4952	
Personnel participating in inspection:		
Ruben Salcido	City of Aztec	Public Works Director
Anthony Garcia	City of Aztec	Wastewater Operations Supervisor
David Esparza, P.E	USEPA/R6-ECDWM	Environmental Engineer
EPA Lead Inspector Signature/Date		
	David Esparza	Date
Supervisor Signature/Date		
	Roberto Bernier	Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

EPA Region 6 inspector David Esparza, PE, arrived at the City of Aztec Wastewater Treatment Plant (WWTP) at approximately 2:00 PM on August 28, 2023, for an unannounced inspection. I met with Ruben Salcido, Public Works Director, and Mr. Lorenzo Garcia, Chief Wastewater Operator, presented my credentials, and informed them that this was an EPA inspection to determine the WWTP's compliance under the Clean Water Act (CWA) and the requirements of the National Pollutant Discharge Elimination System (NPDES) permit program. The generation of this report is based on information supplied by Aztec representatives, observations made by the United States Environmental Protection Agency (EPA) inspector, and records and reports maintained by the permittee (Aztec) and the EPA. Before leaving the facility, an exit briefing was held with Mr. Salcido, and the above-mentioned staff, to explain areas of concern noted at the time of the inspection.

FACILITY DESCRIPTION

The WWTP is a major discharger with a design flow of 1.2 million gallons per day (MGD) Aero-Mod activated sludge treatment plant which was commissioned in September 2009. The activated sludge treatment facility is located at 900 South Oliver Street, Aztec, San Juan County New Mexico (depicted in Aerial Image #1 below). The WWTP serves a population of approximately 6,000 residents. Currently the WWTP has two (2) certified operators and operates on a schedule of Monday through Friday 7:00 AM to 5:00 PM. On-call staff is available on an as needed basis in addition to “spot-checks” on the weekends.



Aerial Image #1 Overall view of the City of Aztec's Wastewater Treatment Plant. Aerial from Google Earth.

The headworks consist of a fine screen auger followed by a parallel pair of grit removal channels (used individually and rotated monthly). Following the headworks, flow enters the on-site Llano lift station equipped with three (3) pumps rated at 900 gallon per minute (GPM) that operate on a rotational basis which pumps the wastewater into the Aero-Mod plant. The WWTP consists of a Bio Phosphorus (Bio P) Reactor with infrequent diffusers cycling six (6) times for four (4) minutes at a time within a 24-hr period. This is followed by the Bio Phosphorous (P) Reactor that is equipped with mechanical mixers to maintain low anoxic dissolved oxygen (DO) and to maintain suspension of the solids. This fermentation stage is followed by dual train aeration basins that cycle between periods of aeration and anoxic periods for denitrification. Each train has a fine bubble and a coarse air basin. Effluent from the aeration basins flows into two (2) secondary clarifiers. Solids are wasted from the Bio P Reactor, the aeration basins, and the secondary clarifiers to an aerobic digester. Return Activated Sludge (RAS) from the clarifiers is returned to the Bio P Reactor, along with decant from the aerobic digesters, where it mixes with the raw influent. From the digester, solids are sent to the belt press, mixed with a dewatering polymer, and transported to the sludge drying beds. Final disposal of solids is to the Waste Management Bondad Landfill in Colorado. The WWTP processes approximately 15 cubic yards per week of solids and typically transports two (2) loads to the landfill. The sludge drying beds have under-drains that return liquids to the head works and mix with raw influent. The clarifiers are followed by the Advanced Nutrient Removal System (ANR) which also operates as a sand filter. Ferric chloride (FeCl_3) is added before the ANR to precipitate phosphorus (P) as it traverses through the ANR. The ANR is followed by the one (1) bank ultraviolet (UV) disinfection (cleaned weekly) and then the effluent is discharged into the Animas River via 1,000-feet of closed conduit pipe.

As stated in the previous CEI, Aztec has updated their policies and procedures to address any potential sanitary sewer overflow events (SSOs), standard operating procedures (SOPs) pertaining to facility operations and maintenance (O&M) and is evaluating implementation of a city ordinance with respect Fats, Oils and Grease (FOG) contributors, though a timeframe was not offered.

Currently, there is no Industrial User (IU) contributing to the WWTP.

Contingency/Emergency Operations

The WWTP maintains two (2) back-up generators to run the on-site lift station and one (1) UV disinfection system. In the event of a power or unit loss, the WWTP has an old racetrack design clarifier (utilized for overflow), a 1 million-gallon (MG) oxidation ditch for flow equalization (EQ), and a permanently positioned pump at the WWTP should a bypass occur to the EQ. Additionally, there is a new supervisory control and data acquisition (SCADA) and call-out system, in the event of an electrical power disruption or unit failure, for the entire plant and the lift Station.

Section II - OBSERVATIONS

I observed the following and/or the following information was provided or stated by WWTP Staff.

- The Aero-Mod activated sludge WWTP was commissioned in September 2009.
- Previously the Advanced Nutrient Removal System (ANR) experienced a potential sidewall structural failure in 2009 to the extent the ANR was taken offline until a structure integrity

assessment could be completed. The assessment resulted in an earthen berm being placed against the length of the outside wall, approximately halfway up to offer potential strength. It should be noted the ANR, along with the aeration basin, were originally designed to be situated below land surface (BLS), however because of the high static water level (SWL) these treatment units were placed above land surface (ALS).

- The aeration basin experienced a similar potential sidewall structural failure in January 2014 (sidewalls were sagging or bulging). An assessment was done, and multiple strands of wire rope cable and structural steel (I-beams) were placed along the outside of the basin in 2014. It was observed the basin wall penetrations were not sealed offering potential caustic chemical gases or liquid intrusion and concrete degradation. Additionally, it was observed several of the wire rope cables had frayed, broken, or were significantly sagging; thus, potentially causing increased stress on the remaining rope cables.
- The WWTP had secure perimeter fencing; thus, limiting access. The overall WWTP's operations and maintenance (O&M), and general facility housekeeping appeared to be in good order.

Section III – AREAS OF CONCERN

- A review of the submitted Integrated Compliance Information System (ICIS) Discharge Monitoring Reports (DMR) data for the period September 30, 2021, through July 31, 2023, indicates numerous NPDES permit excursions with respect to Phosphorus, total (as P)), and Nitrogen, total (as N) (**Appendix 2 ICIS E90 Effluent Violations**).

An additional AOC

- The aeration basin experienced a potential sidewall structural failure in January 2014 (sidewalls were sagging or bulging). An assessment was done, and multiple strands of wire rope cable and structural steel (I-beams) were placed along the outside of the basin in 2014. It was observed the basin wall penetrations were not sealed offering potential caustic chemical gases or liquid intrusion and concrete degradation. Additionally, it was observed several of the wire rope cables had frayed, broken, or were significantly sagging; thus, potentially causing increased stress on the remaining rope cables. Furthermore, the increased tension in the remaining wire rope cables, due to hydrostatic pressure pose an extreme safety hazard to WWTP personnel in the event of failure and sidewall collapse.

Section IV – LIST OF APPENDICES

Appendix 1 – Photo Log – 5 photos taken 8/28/2023

Appendix 2 – ICIS E90 Effluent Violations

Appendix 1

Photograph Log



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 1

Location: Aztec WWTP		
City: Aztec	County/Parish: San Juan	State: New Mexico



View of the old racetrack design clarifier (utilized for overflow), used in conjunction with a 1 million-gallon (MG) oxidation ditch for flow equalization (EQ), and a permanently positioned pump at the WWTP should a bypass occur to the EQ. (DSCN2617). Photographed by D. Esparza



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 2

Location: Aztec WWTP		
City: Aztec	County/Parish: San Juan	State: New Mexico



View of the several wire rope cables frayed, broken, or significantly sagging thus, potentially causing increased stress on the remaining rope cables. NOTE: the rope cable lying at and into the process treatment surface. (DSCN2619). Photographed by D. Esparza



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 3

Location: Aztec WWTP		
City: Aztec	County/Parish: San Juan	State: New Mexico



Another view of the wire rope cables frayed, broken, or significantly sagging; thus, potentially causing increased stress on the remaining rope cables. NOTE: the rope cable lying at and into the process treatment surface. Additionally, these process treatment basins are located approximately 250-feet Northeast of the Animas River. (DSCN2620). Photographed by D. Esparza



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 4

Location: Aztec WWTP		
City: Aztec	County/Parish: San Juan	State: New Mexico



View of one (1) location of the wire rope cable basin wall penetrations not sealed offering potential caustic chemical gases or liquid intrusion and concrete degradation. (DSCN2624). Photographed by D. Esparza



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 5

Location: Aztec WWTP		
City: Aztec	County/Parish: San Juan	State: New Mexico



View of the WWTP outfall (discharge) of effluent into the Animas River. (DSCN2618). Photographed by D. Esparza

Appendix 2
Review
of the
ICIS
E90 Effluent Violations

City Aztec WWTP (NM0020168)

E90 Effluent Violations

Monitoring Period End Date	Outfall	Parameter D	Monitoring	Unit	Limit Value	DMR Value	Reported Number of Excursions
09/30/2021	001	Phosphorus, total [as P]	30DA AVG	mg/L	1.12	1.66	2
02/28/2022	001	Phosphorus, total [as P]	30DA AVG	lb/d	9.32	12.61	3
02/28/2022	001	Phosphorus, total [as P]	30DA AVG	mg/L	1.12	3.4	3
06/30/2022	001	Phosphorus, total [as P]	30DA AVG	lb/d	9.32	12.79	3
06/30/2022	001	Phosphorus, total [as P]	30DA AVG	mg/L	1.12	3.42	3
07/31/2022	001	Phosphorus, total [as P]	30DA AVG	lb/d	9.32	14.82	3
07/31/2022	001	Phosphorus, total [as P]	30DA AVG	mg/L	1.12	3.45	3
08/31/2022	001	Nitrogen, total [as N]	30DA AVG	mg/L	3.04	5.1	2
08/31/2022	001	Phosphorus, total [as P]	30DA AVG	lb/d	9.32	18.77	3
08/31/2022	001	Phosphorus, total [as P]	30DA AVG	mg/L	1.12	4.64	3
09/30/2022	001	Nitrogen, total [as N]	30DA AVG	lb/d	25.3	33.23	3
09/30/2022	001	Nitrogen, total [as N]	30DA AVG	mg/L	3.04	6.9	3
09/30/2022	001	Phosphorus, total [as P]	30DA AVG	lb/d	9.32	9.43	3
09/30/2022	001	Phosphorus, total [as P]	30DA AVG	mg/L	1.12	2.03	3
10/31/2022	001	Nitrogen, total [as N]	30DA AVG	mg/L	3.04	4.15	2
11/30/2022	001	Nitrogen, total [as N]	30DA AVG	mg/L	3.04	4.95	2
02/28/2023	001	Nitrogen, total [as N]	30DA AVG	mg/L	3.04	3.08	1
02/28/2023	001	Phosphorus, total [as P]	30DA AVG	mg/L	1.12	1.3	0
03/31/2023	001	Phosphorus, total [as P]	30DA AVG	mg/L	1.12	1.76	2
04/30/2023	001	Phosphorus, total [as P]	30DA AVG	mg/L	1.12	1.26	2
05/31/2023	001	Phosphorus, total [as P]	30DA AVG	mg/L	1.12	2.04	2
06/30/2023	001	Phosphorus, total [as P]	30DA AVG	lb/d	9.32	12.57	3
06/30/2023	001	Phosphorus, total [as P]	30DA AVG	mg/L	1.12	3.2	3
07/31/2023	001	Phosphorus, total [as P]	30DA AVG	lb/d	9.32	18.85	3
07/31/2023	001	Phosphorus, total [as P]	30DA AVG	mg/L	1.12	4.63	3